

REMARKS

Claims 1-14 remain pending in this application. Each of the pending claims is believed to define an invention which is novel and unobvious over the cited references. Favorable reconsideration of this case is respectfully requested.

The claims as originally filed were a literal translation from a German language application as filed. The claims have been amended to read better in idiomatic English. These amendments to the claims do not affect the scope of the claims.

The specification has also been reviewed and edited to eliminate minor inaccuracies and typographical errors.

Claims 1-14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,697,504 to Hiramatsu in view of U.S. Patent Number 5,805,474 to Danielson et al. Hiramatsu and Danielson do not render the present invention obvious as they do not teach or suggest, among other things, performing a further automatic OCR evaluation for each address information that is not unambiguously recognized within a specific time interval during the viewing coding.

As recited in claim 1, a method for processing goods with an automatic address reading system is provided. An image of a surface containing the address information is obtained. The image is supplied to an OCR unit for the automatic evaluation device. If the address is not recognized unambiguously, the image is transmitted to a video coding station for video coding. If the image of the address information is not unambiguously recognized within a specific time interval by means of the video coding, the image along

with information on recognized address components are transmitted to the OCR unit for further automatic OCR evaluation. Accordingly, after an initial OCR evaluation, a video coding operation is performed. If the video coding operation cannot encode the letter with a clear result during a predetermined time interval, the information, along with any address components that are recognized during video coding, is again provided to the OCR reader for another reading attempt. There is no teaching or suggestion of at least this feature in the cited references.

Hiramatsu describes a video coding system with picture recording means, an OCR reader 4 and video coding stations 7. Following the picture recording and an unsuccessful reading attempt with OCR reader, the video coding system displays the image on a display monitor of the video coding station. Address area candidates and candidates for characters for the user code are shown on the monitor. An operator views these candidates and enters the correct data with the aid of a keyboard and thus completes the correct coding, column 4, lines 39-67 and column 11, lines 44 – column 12, line 26. Accordingly, in Hiramatsu the address reading operation is successfully completed manually by an operator with the aid of the completely recognized user code. There is no teaching or suggestion that if the video coding does not recognize the address information unambiguously within a specified time interval, a further OCR process is performed as is required by the present claims.

The Examiner refers to column 9, lines 20-35 of Hiramatsu as disclosing the further automatic evaluation with the OCR unit for address interpretation. However, the

“second candidate information and specific address code” referred to in the referenced portion of Hiramatsu does not correspond to a further automatic evaluation. In Hiramatsu, the OCR process is used to recognize a user code written on an envelope. The mostly likely location for the user code is the specific user code location 41, column 3, lines 35-50. If the user code is not located in user code location 41, the second highest possibility is second candidate area 45, column 3, lines 56-61. During the OCR process, the character/code and image reader 2 reads the various attribute information of the postal matter P to determine the user codes, column 4, lines 13-21. If the character/code and image reader 2 cannot read the user code, the video coding apparatus 7 is started and manual video coding is performed.

The various attribute information from the postal matter P that was read by the reader 2 is provided to the video coding apparatus 7. This information includes the candidate character information in the specific user code location 41, as well as the second user code candidate area information located in user code location 45, column 9, lines 20-27. This information is then stored in specific locations in the video coding apparatus, column 9, lines 27-35, and displayed to an operator, column 9, lines 37-45. Thus, a second candidate information is simply the information the reader 2 obtains from the second candidate area 45, which is the second most likely place the user code will be located, column 3, lines 55-60.

The operator then determines the user code by visual inspection of the candidate information. If a user code can not be recognized even by the operator viewing the first or

second candidate information, the user code is recognized by visually checking the whole image of display area, column 11, lines 44-65. Thus, there is no further automatic recognition disclosed in Hiramatsu. The user code recognition is performed visually.

Danielson et al. describes a portable data terminal, and is cited as teaching a fixed rate of time limits. Danielson et al. is not cited as teaching a further automatic OCR evaluation and does not supplement Hiramatsu et al. to teach or suggest the features of the present invention missing from Hiramatsu.

In view of the above, it is clear that the cited references do not teach or suggest the claimed invention. Therefore, the withdrawal of the rejection of claims 1-14 under 35 U.S.C. 103(a) is respectfully requested.

In view of the above amendments, it is respectfully submitted that only allowable claims now remain pending in this application. Accordingly, favorable reconsideration and early issuance of a Notice of Allowance is respectfully solicited.

If the Examiner is of the opinion that the prosecution of this application would be advanced by a personal interview, the Examiner is invited to telephone undersigned counsel to arrange for such an interview.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Amendment
U.S. Application No. 09/202,759

The Commissioner is authorized to charge any fee necessitated by this
Amendment to our Deposit Account No. 22-0261.

Respectfully submitted,

2/4/03



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U.S. Appln. No.: 09/202,759

VERSION SHOWING CHANGES MADE

IN THE SPECIFICATION:

Before the first paragraph beginning on page 1, please insert the following
Heading:

--FIELD OF THE INVENTION--

Please replace first paragraph beginning on page 1, with the following rewritten
paragraph:

The invention relates to a ~~method according to the preamble to the independent~~
~~patent claims. In the most far reaching sense, the invention relates to the field of~~
automatic letter processing and in particular to systems, for which an automatic address
reading method is supplemented and improved by the use of video coding during the
address interpretation.

Following the first paragraph beginning on page 1, please insert the following
Heading:

--BACKGROUND OF THE INVENTION--

Please replace second paragraph beginning on page 4, with the following
rewritten paragraph:

Since only the zip/postal code address elements can be input reliably by the
operator, given the on-line delay times that are possible in practical operations, specific

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key components of the address components referring to the street are input during the extraction coding. The extraction coding normally is based on specially developed rules, for which a code window length is used as an access key to an address directory. For example, the Royal Mail uses an extraction formula that is based on the first three and the last two letters. In that case, the operator must memorize special rules to avoid superfluous address information and must take into account specific, differentiating characteristics, e.g. directions such as east, west or categories such as street, lane, road.

Following the first full paragraph beginning on page 6, please insert the following
Heading:

--SUMMARY OF THE INVENTION--

Please delete the first paragraph on page 7.

Following the first paragraph beginning on page 7, please insert the following
Heading:

--BRIEF DESCRIPTION OF THE FIGURES--

Please replace fifth paragraph beginning on page 7, with the following rewritten
paragraph:

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Figure 1 shows a schematic representation of a letter distribution facility for implementing the method according to the invention. The OCR letter sorter 100 comprises a feeding device 110, which pulls successive goods from a magazine 111 and transports these at approximately 10 goods per second to a high-resolution video scanner 120. Following this, the goods are transported along a delay loop 121. The goods normally have address information on their surfaces. The OCR processor 130 is used for an evaluation of the address information on the images for the goods, obtained with the video scanner 120. If the evaluation is completed, a bar code printer 150 is actuated and the item is provided with a corresponding bar code for the subsequent sorting into sorting compartments 160.

_____The OCR processor 130 comprises one or several microprocessors 131 with associated memory 132 for storing the images of the goods. The OCR processor furthermore comprises an address directory 134 with zip codes, city names and street names and possibly additional address-related information. During the evaluation of the images containing address information, a reduction, controlled by characteristics, of the entry obtained through the address directory occurs, such that a sort of partial dictionary is created. Reliability factors are associated during the individual entries, so that during the evaluation a number of data from correctly identified addresses are generated. The device furthermore contains an image controller 170, as well as a number of video coding stations 200, which are connected directly to the image controller 170 or via a local area network (LAN) 171. If the OCR evaluation of an image is not or not completely

successful, this image is transferred from the OCR processor 130 to the image controller 170, which controls on the one hand the TID bar code printer 151 and, on the other hand, sends the corresponding image to one of the video coding stations 200. The TID bar code printer 151 affixes an identification code TID to the corresponding item, which makes it possible to link the evaluated address information at a later time to a physical item. In that case, the images are preferably evaluated off-line, even though an on-line evaluation through video coding is basically possible, given a sufficiently long delay time. In the latter case, the TID can also be affixed to the goods at a later point in time, meaning if the video coding did not result in a complete evaluation within a predetermined, specific time interval.

Please replace third paragraph beginning on page 10, with the following rewritten paragraph:

1. The phase for data input through video coding, where a coding of certain parts of the address information takes place, preferably with a simple extraction code. During this process, the zip/postal code information as well as a larger portion of the additional address information is normally evaluated completely or the locality names are extracted if the zip/postal code is missing. A first automatic evaluation of the address information already preceded this phase.

The input is preferably shown with a divided display. In order to simplify the input, a simple extraction code is used, e.g. a 4-digit postal code, the first four

alpha characters of the street name and the digits for the house numbers of the respective addresses. With this extraction coding, an adaptation to the respective postal conventions is possible without problems. For example, the number of first letters can be varied. Preferably, the operator will input the postal code only if the OCR evaluation did not show any result at all. Thus, the input of street information will apply to most of the postal goods. A structuring of the video coding preferably can also occur in that one group of operators enters the postal code and street information while another group enters street information only. Since a specific percentage of the mail nowadays contains post office box information, a suitable key space on the keyboard should preferably be assigned as a post office box key, which can be depressed by the operator if necessary. Following this, the post office box number is entered. With company addresses, which lack street data or post office box data, it is also possible to enter the company line.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Amended) A method for processing goods with an automatic address reading system, comprising:
obtaining ~~wherein~~ for each item an image of ~~the~~ a surface containing the address information; ~~is obtained for each item and is supplied~~

supplying the image to an OCR unit for the automatic evaluation device; ~~and,~~
if the address information is not recognized unambiguously, transmitting the
~~associated image is transmitted further~~ to a video-coding station for video coding; ~~and,~~
~~characterized in that~~ transmitting the image of each address information
that is not unambiguously recognized within a specific time interval by means of the
video coding ~~is transmitted~~ along with the information on recognized address
components, obtained during the video coding, to the OCR unit for further OCR
automatic evaluation for an address interpretation.

2. (Amended) A method according to claim 1, ~~characterized in that~~ further
comprising transmitting the image of each address information that is not unambiguously
recognized during the further automatic OCR evaluation for the address interpretation ~~is~~
~~transmitted~~ along with the obtained information to a the video-coding station.

3. (Amended) A method according to claim 1 or 2, ~~characterized in that~~
further comprising performing an extraction coding ~~is carried out according to the~~
extraction rules during the first video coding.

4. (Amended) A method according to claim 2, ~~characterized in that~~ further
comprising performing a selection coding ~~takes place~~ during the additional video coding,
in such a way that a selection is made from a number of alternative evaluation results.

5. (Amended) A method according to claim 4, ~~characterized in that~~
wherein the alternative evaluation results are formed from the unclear results of the
extraction coding.

6. (Amended) A method according to claim 5, ~~characterized in that~~
wherein alternative evaluation results are formed from address information, which
contains additional sorting information.

7. (Amended) A method according to one of the claims 1, ~~characterized in~~
~~that wherein~~ a first component of the address information is evaluated and that a second
component of the address information is evaluated and that the results of these
evaluations are checked with respect to mutual consistency.

8. (Amended) A method according to claim 7, ~~characterized in that~~
wherein the image of any address information, which has not been recognized
unambiguously within a specific time interval by means of video coding is transmitted
along with the information on recognized address components, obtained during the video
coding, to the OCR unit for a further automatic evaluation.

9. (Amended) A method according to claim 1, ~~characterized in that~~
wherein the first automatic evaluation of the address information is performed on-line or
off-line.

10. (Amended) A method according to claim 1, ~~characterized in that~~
wherein the goods, for which no complete, additional automatic on-line evaluation or an
evaluation through video coding of the address information has taken place, are provided
with an identification marking (TID) for an additional automatic or video coding, to be
performed off-line.

11. (Amended) A method according to claim 1, ~~characterized in that~~
wherein a preview coding method is used, at least for one of the video coding processes.

12. (Amended) A method according to claim 1, ~~characterized in that~~
wherein a differentiation between address information and sender information is made for
the video coding.

14. (Amended) A device according to claim 13, ~~characterized in that~~
further comprising a device is provided for affixing identification information (TID) to
goods where the address information has not been evaluated completely on-line.